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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,540	02/03/2005	Karikath Sukumar Varma	1-16908	7555
1678 7590 04/19/2007 MARSHALL & MELHORN FOUR SEAGATE, EIGHT FLOOR TOLEDO, OH 43604			EXAMINER BALDWIN, GORDON	
			ART UNIT	PAPER NUMBER
			1775	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/19/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/523,540

Applicant(s)

VARMA ET AL.

Examiner

Gordon R. Baldwin

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 17, 19-22 and 28-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17, 19-22 and 28-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 17, 19-22 and 28-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Boel (U. S. Pat. No. 4,190,698) and further in view of Varma (Pub. No. WO/2002/024445).**

Consider claim 17, 20-22, 28-32, 41-42, De Boel teaches a light transmitting fire screening panel (considered to be transparent) comprising at least one sheet of glass and one layer of intumescent material which comprises a layer of a hydrated alkali metal silicate and polyhydric alcohol in the form of glycerine, or ethylene glycol with the addition of sodium aluminate as the alkali metal aluminate. (Abstract and Col. 3 lines 65-68) De Boel also teaches that the thickness of the intumescent layer is at most 8mm and therefore can be in a range of greater than zero to 8mm. (Col. 4 lines 15-22) It is also taught that the weight ratio of  $\text{SiO}_2$  to  $\text{Na}_2\text{O}$  was 3.3 to 1 with the percentage of water being 34%. (Col. 4 lines 45-55)

However, De Boel does not teach the use of a hydroxyl carboxylic acid with the clear intumescent layer, but Varma teaches a process for the production of an intumescent layer (that is 0.3-5.0 mm thick) upon the surface of a glass substrate which

comprises a alkali metal waterglass with a alkali metal salt of carbonic acid or an alpha-hydroxy carboic acid, which can be citric acid. (Claims 1, 2 and 11) Also, multiple glass sheet can be used. (Para. 23)

It would have been obvious for a person of ordinary skill in the art at the time of the invention to combine the intumescent layer of De Boel with the intumescent layer of Varma with an alpha-hydroxy carboic acid that would aid in the drying process of the intumescent layer. (Para. 15 on page 3)

**Consider claim 19, 38-40**, while neither De Boel nor Varma seem to teach the percentage of aluminum nor the ratio of silicon to aluminum, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the aluminum content for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

**Consider claims 33-37**, Varma teaches a sodium silicate waterglass with a weight ratio of  $\text{SiO}_2:\text{Na}_2\text{O}$  is at least 2:1 more or preferably the weight ratio is at least 2.5:1 and preferably 2.85:1. Varma also teaches an alkali metal silicate waterglass with potassium silicate and lithium silicate waterglass wherein the ratio is  $\text{SiO}_2:\text{K}_2\text{O}$  is in the range 1.4:1 to 2.1:1. (Para. 12 and 13 on page 3)

### ***Response to Arguments***

Applicant's arguments with respect to claims 17-42 have been considered, but are moot in view of the new ground(s) of rejection.

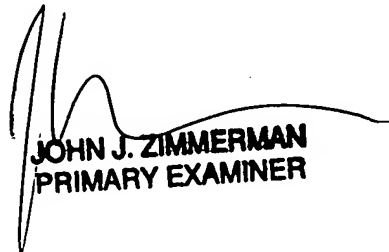
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon R. Baldwin whose telephone number is (571)272-5166. The examiner can normally be reached on M-F 7:45-5:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GRB

  
**JOHN J. ZIMMERMAN**  
**PRIMARY EXAMINER**